

# THE CHIGGER PROBLEM IN CITY LAWNS WITH SUGGESTIONS FOR THEIR CONTROL

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For several years the chigger, *Trombicula alfreddugesi* (Oudemans), has been a common pest problem in city lawns in various parts of Ohio, particularly in the southern half of the State. Columbus is one of the portions that is heavily infested. A brief survey has shown chiggers are common on lawns in all parts of the city and calls come in daily during the summer season for help in controlling them.

Persons of all ages may subject themselves to the attacks of chiggers in various ways. Such daily tasks as mowing or sprinkling the lawn, or hanging freshly laundered clothing on a line are the easy ways to become infested. Youngsters crossing the grass at play or engaged in various games upon the lawn are often heavily attacked. Occasional gatherings around a picnic table on the rear lawn seems to be a common source of infestation.

Because of the urgent and continuous request for assistance, the writers carried out a series of replicated tests during July, August, and September using some twenty lawns to determine the relative merits of some of the more recently developed insecticides.

Over a period of years previous to 1950, nicotine in different forms, pyrethrum, and various forms of sulphur were used upon the lawns but without successful control. Azobenzine was found to give excellent control when it was first available in experimental quantities but it never became a widely distributed commercial product and could not be recommended for general use. During the summer of 1949, Benzine hexachloride at a 1% gamma strength gave adequate control of chiggers but was not considered successful because of the odor which accompanied the treatment and continued for several weeks thereafter.

Among the several materials that were used in these tests, the best results were obtained by Chlordane, Lindane, and Dimite. Lindane 20% emulsifiable material was used at the rate of 2½ pints per 100 gallons of water as a lawn grass and foliage application. This was at the strength of one part of Lindane to 1,600 parts of water. The amount used was approximately 1 gallon to 300 square feet of lawn or at the rate of 145 gallons per acre. Chlordane was used at about the same strength and rate. Dimite-di (p-chlorophenyl methyl carbinol) was used at the rate of 1 pint of 25% emulsifiable strength to 100 gallons of water or at a 1 to 3,200 dilution. The same rate per acre was used as in the preceding materials. In each case repeated examinations indicated a complete chigger control for a period of at least six weeks after application, in some cases where applications were made sufficiently early in the season eight weeks control was obtained. In all cases the treatment remained effective until normal seasonal chigger activity had ceased. The treated lawns were compared through the season with the untreated lawns bordering them to determine the length and degree of infestation during the period the treated lawns were under observation.

Another problem should be considered. The shrubbery surrounding the lawn is often infested and persons may be attacked by reaching through or brushing against the shrubbery in order to reach a water faucet even though the grass has been entirely freed from chiggers. In these cases the shrubbery has also been treated in experimental tests.

Populations of chiggers are usually unevenly distributed and population size is difficult to determine. Two methods were used for checking presence or abun-

dance, the black paper method of Jenkins (1947), and the human "guinea-pig" method.

In view of the fact the larvae usually climb up and congregate on sticks or stumps and similar objects, pieces of black paper or board 5" x 8" if placed on edge in the grass for a short time will usually collect and show the presence of chiggers.

The most satisfactory method from the standpoint of lawns is to use the residents as guinea-pigs and see if they can pick up any chiggers while performing the customary tasks under which conditions infestations have been obtained prior to treatment. The possibilities of error and the influence of psychological factors were given due consideration in the data collected by this method.

In several cases where treatments were made, residents voluntarily agreed to subject themselves to more possible infestation in order to check the effectiveness of these materials. Also, parents examined youngsters carefully every day for newly attached chiggers in order to assist in determining the degree of control obtained in several specific cases.

#### REFERENCE

- Jenkins, D. W.** 1947. The ecology and laboratory rearing of chiggers affecting man in the United States (Acarina, Trombiculidae). Abstracts of Dissertations, The Ohio State University Press. p. 80.
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